Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Establishing the Digital Opportunity Data Collection	)	WC Docket No. 19-195
	)	
	)	
Modernizing the FCC Form 477 Data Program	)	WC Docket No. 11-10
	)	

COMMENTS OF COMPETITIVE CARRIERS ASSOCIATION

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INTRODUCTION AND SUMMARY

Competitive Carriers Association ("CCA")[1] hereby submits the following comments in response to the *Second Further Notice of Proposed Rulemaking* in the above-captioned proceeding. The Federal Communications Commission ("FCC" or "Commission") seeks comment on how best to ensure the collection of high-quality broadband coverage data as part of the Digital Opportunity Data Collection.[2] So long as the submitted data adheres to several basic standards, CCA believes that the Digital Opportunity Data Collection ("DODC") will ultimately result in higher-quality and more reliable wireless broadband coverage maps of the United States that identify accurately where mobile wireless coverage is available and unavailable.

CCA appreciates the Commission's dedication to closing the digital divide.[3] CCA continues to support the Commission's efforts to identify areas where broadband coverage is available and unavailable through an accurate and efficient data collection, and to ensure that this

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1 CCA is the nation's leading association for competitive wireless providers and stakeholders across the United States. CCA's membership includes nearly 100 competitive wireless providers ranging from small, rural carriers serving fewer than 5,000 customers, to regional and national providers serving millions of customers. CCA also represents associate members including vendors and suppliers that provide products and services throughout the mobile communications supply chain.

2 *Establishing the Digital Opportunity Data Collection and Modernizing the FCC Form 477 Data Program*, Report and Order and Second Further Notice of Proposed Rulemaking, FCC No. 19-79, WC Docket Nos. 19-195 & 11-10, ¶ 53 (rel. Aug. 6, 2019) ("*FNPRM*").

3 CCA is pleased that policymakers throughout the Government take this issue seriously and notes that legislation that would encourage investment in areas affected by poor mobile internet service is currently pending before the Senate. *See* Broadband Deployment Accuracy and Technological Availability Act, S. 1822, 116th Cong. (2019) (directing the FCC to collect more granular data, improve the parameters used for data collection, consider verification of the data collected and establish a process to challenge areas where providers claim to have service).

coverage data reflects consumers' experiences.[4] CCA submits these comments to encourage the Commission to apply a set of factors to the DODC that will standardize the data collected, result in a better understanding of wireless carriers' broadband coverage, and ultimately produce more reliable coverage maps. Establishing standard factors will also help to avoid an exceptionally burdensome, time consuming, and costly challenge process like that undertaken in Mobility Fund Phase II ("MF II"). While CCA continues to support a challenge process to ensure accuracy, the Commission can take significant steps to help to facilitate a less burdensome process.

I. THE SUBMITTED DATA MUST REFLECT ON-THE-GROUND COVERAGE.

As the Commission observes, "the fixed and mobile broadband deployment data collected on the Form 477 are not sufficient to support the specific imperative of [the Commission's] USF policy goals."[5] Earlier this year, the Commission used Form 477 data to report that "as of year-end 2017, approximately 99.8% of the American population lives in geographical areas covered by mobile LTE with a minimum advertised speed of 5 Mbps/1 Mbps."[6] By any account, this reported figure does not match consumers' on-the-ground experience.[7]

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4 *See* Statement of Chairman Pai on Circulation of Order to Extend Mobility Fund Phase II Challenge Process (rel. Aug. 3, 2018), *available at* https://docs.fcc.gov/public/attachments/DOC-353253A1.pdf.

5 *FNPRM* ¶ 10.

6 *Inquiry Concerning Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion*, 2019 Broadband Deployment Report, FCC No. 19-44, GN Docket No. 18-238, ¶ 35 (rel. May 29, 2019).

7 *See, e.g.*, Comments of Competitive Carriers Association, WC Docket No. 11-10 (filed Oct. 10, 2017) ("*CCA Form 477 NPRM Comments*"); Comments of Competitive Carriers Association, WT Docket No. 10-208, WC Docket No. 10-90 (filed Apr. 26, 2017) ("*CCA MF II Comments*"); Reply Comments of Competitive Carriers Association, WT Docket No. 10-208, WC Docket No. 10-90 (filed May 11, 2017) ("*CCA MF II Reply Comments*"); Letter from Rebecca Murphy Thompson, EVP & GC, CCA, to Marlene H. Dortch, Secretary, FCC,

The significant limitations of the current data were confirmed by the Commission's most recent mobile data collection to determine a map of areas presumptively eligible for MF II support.[8] While CCA appreciates the steps that the Commission took to standardize data in that collection, we now know that the parameters that the Commission adopted in the MF II proceeding failed to reliably identify which areas are sufficiently served, because they were inconsistent with real-world network utilization and were at too high a level of generality to allow carriers to provide actionable coverage probabilities.[9] Continuing to rely on Form 477 data, even if compliant with the Commission's current requirements, will produce neither consistent nor precise enough data to reliably determine which geographic areas have adequate mobile broadband service.

The Commission is right to correct these past issues by moving forward with DODC. But before taking this much needed step in furthering our nation's broadband goals, the Commission must ensure that the data collected produces coverage maps that as closely as possible reflect accurate on-the-ground user experiences.

WT Docket No. 10-208 (filed Feb. 7, 2018); Testimony of Tim Donovan, SVP of Legislative Affairs, CCA, Committee on Small Business, "Broadband Mapping: Small Carrier Perspectives on a Path Forward" (116th Cong.) (June 25, 2019) ("*Tim Donovan HR Testimony*").

8 *Updated Version of Map of Areas Presumptively Eligible for Mobility Fund Phase II Now Available*, Public Notice, DA No. 18-799, WT Docket No. 10-208 (rel. Aug. 1, 2018) ("*FCC MF II Map*").

9 *See, e.g.*, Letter from Rebecca Murphy Thompson, EVP & GC, CCA, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 10-208 (filed July 27, 2017) ("*CCA MF II Parameters Letter*"). *See also* letter from Alan Buzacott, Executive Director of Federal Regulatory Affairs, Verizon, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 10-208 (filed July 27, 2018).

II. THE COMMISSION SHOULD ADOPT A SPECIFIC SET OF FACTORS TO STANDARDIZE DATA COLLECTION, BETTER UNDERSTAND CARRIERS' BROADBAND COVERAGE, AND PRODUCE MORE RELIABLE MAPS.

CCA agrees with the Commission "that broadband coverage polygons will allow more granular analysis than the census-block data currently collected in the Form 477."[10] More granular maps will benefit small and large carriers alike and are critical for policymakers' ability to accurately and efficiently distribute federal support. Nevertheless, granular analysis based on insufficient data will not help consumers because support will not be distributed where it is needed. While recognizing that no model will perfectly reflect on-the-ground coverage, the Commission should take steps to further standardize modeled coverage.

The Commission should use this new collection to improve the parameters applied to data submitted in Form 477 submissions, which are currently insufficient. An improved set of parameters will ensure that the data produced here "more accurately reflect consumer experience."[11] Mobile coverage data is used for multiple purposes, but all those purposes would benefit from an accurate representation of actual coverage.

Specifically, CCA suggests that the FCC apply the following set of factors to the data collection.[12] A detailed Radio Frequency Link Budget submission should include the following factors:

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10 *FNPRM* ¶ 21.

11 *See, e.g.*, Public Notice, *Procedures for the Mobility Fund Phase II Challenge Process*, WT Docket No. 10-208 ¶¶ 19, 36 (rel. Feb. 27, 2018) ("Challenge Process Procedures PN"); Universal Service Reform—Mobility Fund, *Order on Reconsideration and Second Report and Order*, WT Docket No. 10-208, (rel. Aug. 4, 2017) ("Second Report and Order").

12 *See supra*, note 3. *See also*, Testimony of Tim Donovan, SVP of Legislative Affairs, CCA, Subcommittee on Commerce, Science, and Technology, "Broadband Mapping: Challenges and Solutions" (116th Cong.) (Apr. 10, 2019).

- Signal Strength. Standardizing the Reference Signal Received Power ("RSRP") will base measurements on the same real-world measurements that wireless networks use to determine cell selection and handover, among other network functions. Current Form 477 filings show that these approaches to measuring signal strength can be subjective and can vary by equipment vendor and network design. Weaker RSRP means that the coverage area is larger but that the actual coverage is less reliable at the cell edge. All carriers should therefore report a standard RSRP level, controlled for individual carriers' varied spectrum portfolios and use.[13] In rural areas where sites are isolated, a 5 dB increase in the Maximum Allowed Path Loss for a single site leads to a doubling of coverage area. For 4G LTE specifically, a -85 dBm RSRP level per 5 megahertz channel would reflect excellent coverage, while a signal strength of no lower than -105 dBm per 5 megahertz channel would reflect the type of reliable signal strength that consumers expect.[14] In contrast, a -120 dBm level per 5 megahertz channel could register that a consumers' device is connected to LTE service, but nevertheless provide for a poor connection that fails to support many applications or functions.
- Cell Edge Probability. Cell edge probability determines the likelihood that the minimum speed is possible at the furthest point from the base station. From data collected during the MF II process, it is evident that an 80 percent cell edge probability significantly overstates coverage capabilities. CCA has consistently encouraged the FCC to revisit

[13] *See CCA MF II Parameters Letter* at 2.

[14] *See CCA MF II Comments* at 15 (*citing*, letter from David A. LaFuria, Counsel to United States Cellular Corporation, to Ms. Marlene H. Dortch, Secretary, FCC, WC Docket No. 10-90, WT Docket No. 10-208, at 2 (filed Feb. 17, 2017).

this parameter and adopt a cell edge probability of 90 percent or higher.[15] Networks in rural areas are designed to ensure that consumers are afforded ubiquitous coverage at broadband speeds right through to the cell edge. In addition, signal drop can be dramatic in rural areas outside the cell edge. This is notably different from an urban network, which may have a more gradual signal drop because carriers are able to use small cells or other technologies to pick up or improve a signal, and have greater numbers of cell base stations to pick up the customer as they leave the cell edge.[16] At a rural site, for example, an 80 percent cell edge probability extends the cell radius by about 27 percent and increases the projected "covered" area by about 60 percent compared to a much more accurate 90 percent cell edge probability. The additional 60 percent assumed coverage area could represent hundreds of square kilometers of additional "coverage" per site that, in reality, is mostly insufficient to support reliable service. CCA accordingly continues to emphasize that a map defined by at least 90 percent cell edge probability and 50 percent cell loading factor will prevent against an overstatement of network coverage and help to ensure certain rural communities are provided adequate mobile broadband service.[17]

- Cell Loading. Cell loading determines the extent to which available resources from a given base station may be used by consumers while providing minimum coverage speeds. In the MF II proceeding, the FCC directed reporting providers to apply a 30 percent load factor, which failed to accurately reflect network use in rural areas. In rural areas,

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15 *CCA MF II Parameters Letter* at 2. Commercial operators generally design their networks to operate at a minimum 90 percent cell edge probability.

16 *Id.*

17 *Id.*

coverage is typically provided by low-band spectrum, which has more favorable propagation characteristics for coverage over large areas, but it has limited capacity compared to higher frequencies. As a result, these sites are often prone to being heavily loaded.[18] For example, one CCA carrier member reports that its rural sites utilizing low-band spectrum routinely experience average cell loading in excess of 50 percent in the evening hours. The FCC should revisit this parameter and adopt a cell loading factor of at least 50 percent on the downlink, or higher, to reflect the reality that consumers in rural areas are more likely to rely on their mobile connection for their primary or only Internet connection.[19]

- Clutter Factors. Clutter factors include environmental features such as structures, trees, vegetation, topography, or other objects that affect propagation of a signal from a base station. With varied geographic features across the country, clutter factors should match local environments, and accordingly clutter factors cannot be standardized. Nevertheless, CCA submits that carriers should be required to appropriately report clutter factors across coverage areas in order for the Commission and potential challengers to assess the reliability of the coverage submissions.[20] Clutter factor submissions also should include clear indications of the precise loss values assigned to the clutter and feeder type.

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[18] As Verizon has previously highlighted, network loading in at least one rural region in Oklahoma often exceeds 30 percent. *See* Letter from Alan Buzacott, Executive Director of Federal Regulatory Affairs, Verizon, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 10-208 at 4 (filed July 27, 2018).

[19] *See CCA MF II Parameters Letter* at 2.

[20] *See id*. at 3; *CCA MF II Comments* at 11.

III. THE MOBILITY FUND PHASE II CHALLENGE PROCESS IS OVERLY BURDENSOME AND INSUFFICIENT TO CORRECT FLAWS, PARTICULARLY FOR SMALL PROVIDERS.

The Commission is also seeking "comment on whether [it] should establish a challenge process similar to the MF-II challenge process to verify Form 477 filings."[21] CCA believes that a challenge process is essential to ensuring that competitive carriers are able to alert the Commission regarding areas that are improperly labeled "covered" due to inaccurate data. However, the MF II challenge process put an enormous burden on small providers, which resulted in a low number of certified challenges, despite the serious errors in the submitted data.

In order to challenge the MF II map, a small business challenger had to follow an extremely costly and time-consuming process.[22] After downloading the mapping data from the Commission's portal, the challenger compared the Commission's data to all available information about every carrier offering service in an area. If that research led a challenger to conclude that the Commission's map was inaccurate, it could conduct drive tests and submit its results to the Commission for consideration. This itself was a massive task because many rural areas that could be challenged have thousands of square kilometer blocks that must be separately analyzed to determine whether any carrier is providing service. Of course, to dispute coverage sufficiently, the tests must include all unsubsidized wireless companies claiming coverage inside that block, and the challenger must subscribe to rate plans and constantly monitor usage to ensure service is not throttled or subject to data caps, which could bias the tests and collect unusable test results.

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21 *FNPRM* ¶ 52.

22 *See Procedures for the Mobility Fund Phase II Challenge Process*, Public Notice, 33 FCC Rcd. 1985 (2018).

Because the Commission's rules required a challenger to demonstrate lack of coverage in 75 percent of the grid being challenged, only grids with accessible roads could be challenged. Vehicle-based drive testing must be done on drivable roads, which in rural areas can be far apart or inaccessible due to private or public restrictions, seasonal closures, or other factors. This is a significant limitation; indeed, some CCA members report that up to half of the rural blocks do not have enough drivable roads to meet the Commission's 75-percent benchmark. Consequently, if a carrier claims coverage in those areas, there can be no challenge.

While challengers bore the burden of proof, challenged carriers have not been required to provide drive tests in their rebuttals. Instead, challenged carriers will have to submit data from transmitter monitoring software that would show geolocated, device-specific throughput measurements and other device-specific information, along with certifications from an engineer. This will limit costs for the challenged carriers, diminishing the potential deterrent effect of using a challenge process.

To provide some perspective on how daunting this challenge process has been for carriers of all sizes, one of CCA's small carrier members attempted to analyze 165,000 separate square kilometer blocks within its service area that it believed could possibly be incorrectly labeled as "covered." That company tested several thousand blocks, but lacked the resources needed to test a substantial portion of the blocks that appeared to be worth a challenge. One of CCA's larger carrier members spent over $2 million to hire a testing firm that completed tests in 20 states and challenged 37,000 one square kilometer blocks. Even with this resource allocation, the member completed testing in less than 5% of the carrier's overall rural footprint.[23] Of the 106 entities

[23] *Tim Donovan HR Testimony* at 6.

that had access to the MF II challenge portal, only 21 entities submitted and certified valid challenges. Many CCA members abandoned the process due to the associated burdens.

Due to the MF II challenge process's daunting requirements, many challengers were unable to challenge all of the areas they believe were incorrectly labeled. The implications of these shortcomings are significant: in any area where the Commission's data incorrectly showed unsubsidized coverage, there could be no investment of universal service support without a successful challenge. Without that support, unserved people living in those areas could wait years before gaining access to mobile broadband services that are reasonably equivalent to services found in the nation's more densely-populated regions.

Therefore, while CCA supports the adoption of a challenge process to the DODC, it is essential that any challenge be in response to data that meets the baseline standards identified above. Improved initial data submissions will necessarily reduce the burdens on challengers by starting with more accurate data. Without those standards discussed above, too many areas will be improperly labeled, forcing potential challengers to limit their efforts to what they can afford. This will leave the FCC with bad data and insufficient challenges to that data.

CONCLUSION

CCA appreciates the Commission's dedication to closing the digital divide. The Commission's efforts in this area are improving the lives of the many Americans living in rural areas. As it continues in this important endeavor, CCA encourages the Commission to foster policies that produce a coverage map that accurately depicts where advanced communications services are available. CCA looks forward to continued work with the Commission to achieve this shared goal.

Respectfully submitted,

/s/

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